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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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46726	7590	06/27/2006	EXAMINER	
JOHN T. WINBURN 100 BOSCH BOULEVARD NEW BERN, NC 28562			HOANG, ANN THI	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,054	JERG ET AL.	
	Examiner	Art Unit	
	Ann T. Hoang	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The objection to the disclosure is withdrawn in view of the amendment to the specification filed 6 March 2006.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-12 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Daffron (US 6,046,441).

Regarding claim 11, Simpson discloses a fire protection device for domestic appliances, comprising: at least one fault current circuit breaker (32, 34, 68, 42) coupled to the input electrical supply (62) of at least one conductor (12a, 14a) of a domestic appliance, which fault current circuit breaker (32, 34, 68, 42) disconnects said electrical supply (62) from said appliance when said fault current circuit breaker (32, 34, 68, 42) senses a fault current in said at least one conductor (12a, 14a). Fault current circuit breaker (32, 34, 68, 42) comprises a primary transformer (32) and secondary winding (34) for sensing a load current, comparison and activation circuitry (68), and a power disconnect relay (42) that can be reset. Circuitry (68) causes relay (42) to disconnect,

thus breaking the circuit, between conductors (12a, 14a) and the power in the electrical supply outlet (62) when current sensing means (32, 34) detects an overload fault current. See abstract; Figs. 2-7; column 8, lines 36-39 and 49-67; column 12 lines 48-52; and column 18, lines 7-17. Simpson does not disclose a gas sensor.

However, Daffron discloses at least one gas sensor (6, 10) coupled to sense the quantity of at least one control gas in an appliance (5), which gas sensor (6, 10) causes an electrical supply (3) to be disconnected from said appliance (5) when said gas sensor (6, 10) senses a predetermined quantity of said at least one control gas. A circuit breaker mechanism (11, 12) disconnects the appliance (5) from electrical supply outlet (3) when at least one gas sensor (6, 10) senses a predetermined amount of carbon monoxide or carbon dioxide. See abstract; Figs. 1-3; column 2, and lines 4-9 and 15-19. Since both fault currents and gaseous combustion by-products can be an indication of the presence of a fire, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the fire protection devices of Simpson and Daffron in order to provide a fire protection device that senses both fault currents and gaseous combustion by-products, thus improving fire protection.

Regarding claim 12, Simpson discloses a plurality of conductors (12a, 14a), said fault current circuit breaker (32, 34, 68, 42) coupled to each of said conductors (12a, 14a) and a fault current detected in one of said conductors (12a, 14a) causes said fault current circuit breaker (32, 34, 68, 42) to disconnect said electrical supply (62) from said appliance by an all-pole disconnection. Power disconnect relay (42) is coupled to interrupt all line and neutral sources (36, 38) in electrical supply (62) from all conductors

(12a, 14a) in the event of a sensed fault current. Thus, it is an all-pole disconnection. See column 12, lines 48-52. Daffron shows in Fig. 3 that circuit breaker mechanism (11, 12), and particularly the contactor (12) of the circuit breaker (11, 12), to be coupled to all the conductors (2) so that electrical supply (3) will be disconnected from all power lines of appliance (5) when gas sensor (6, 10) senses a predetermined amount of gas. Thus, it is an all-pole disconnection.

Regarding claim 18, the fault current circuit breaker (32, 34, 68, 42) of Simpson acts as a main switch (42) for said domestic appliance. Fault current circuit breaker (32, 34, 68, 42) connects or disconnects the main plug (10a) to or from electrical supply (62), thus serving as a switch (42) that connects or disconnects all components of the appliance to or from electrical supply (62).

Regarding claims 19 and 20, Daffron discloses a plurality of gas sensors (10) to be secured within the chambers of domestic appliance (5). See Figs. 1 and 3 and column 2, lines 66-67. The reference does not specify the specific location of the interior chamber of the appliance (5) to which gas sensors (10) are secured. However, since the reference discloses a plurality of gas sensors, it is interpreted that the sensors could be secured to a variety of places in the chamber of the appliance, including the door, the floor, the ceiling, or any walls of the chamber, in order to sense gaseous combustion by-products in various locations of the chamber.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Daffron (US 6,046,441) as applied to claim 11 above, and further in view of Aromin (US 5,943,199).

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Regarding claim 13, Simpson discloses that said fault current circuit breaker (32, 34, 68, 42) may be installed within the electrical supply outlet (62) or embodied in an electrical outlet adaptor (144). See Figs. 6 and 9 and column 15, lines 15-18. The reference does not disclose fault current circuit breaker (32, 34, 68, 42) to be integrated into a mains plug (10a) of said electrical supply (62) of said appliance.

However, Aromin discloses a circuit breaker (13) on a circuit board provided with circuitry (11) integrated into a mains plug. See Figs. 5 and 8. It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the circuit breaker (32, 34, 68, 42) of Simpson into the mains plug (10a), as done by Aromin, in order to provide a single plug unit for easier use and avoid extra connections as required by an adaptor.

5. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Daffron (US 6,046,441) and Aromin (US 5,943,199) as applied to claim 13 above, and further in view of Cheyne (US 5,604,387).

Regarding claim 14, the fault current circuit breaker (32, 34, 68, 42) of Simpson is coupled to said mains plug (10a) to connect or disconnect mains plug (10a) to or from electrical supply (62), thus acting as a main switch (42) for supplying individual components of said domestic appliance. Simpson does not disclose the main switch (42) as supplying low voltage to said components.

However, Cheyne discloses the use of a low voltage switch (7) for supplying electric power at a low voltage level to a load of a household appliance from a higher voltage supply, the advantage of low voltage operation being improved safety, reduced

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switch and insulation costs, and reduced safety standard requirements for conventional wiring at line voltage potentials. See column 6, lines 60-66; column 7. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a low voltage circuit breaker to supply low voltage to the individual components of the appliance of Simpson in order to improve safety, reduce switch and insulation costs, and avoid the need for compliance with high voltage safety standards.

Regarding claim 15, Simpson discloses current sensing means (32, 34) connected to fault current circuit breaker (32, 34, 68, 42). Daffron discloses gas sensor (6, 10) to be connected to circuit breaker (11, 12). See column 3, lines 8-10. In the combination of Simpson and Daffron, it would have been obvious to connect both the current sensing means and the gas sensor to the same circuit breaker in order to reduce components and save the space required to accommodate two separate circuit breakers.

Regarding claim 16, Daffron shows in Fig. 2 that gas sensor (6, 10) is connected to a protective conductor, which is represented by the connection drawn between gas sensor (6, 10) and the protection device connected between appliance plug (20) and electrical supply (3). The connection is a protective conductor in that it is an electrically conductive line that sends a protection signal from gas sensor (6, 10) to the protective device connected between appliance plug (20) and electrical supply (3). Daffron also discloses circuit breaker (11, 12) to be triggered at a predetermined concentration of said control gas. See abstract.

Regarding claim 17, Simpson shows in Fig. 6 that the main switch (42) is connected to a protective conductor (36, 38), the electrical connection between main switch (42) and the point of connection (18) with conductors (12a, 14a) of mains plug (10a) of the appliance. This connection is an electrically conductive connection that carries the protection signal for switching main switch (42).

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Liu (US 6,603,221) and Daffron (US 6,046,441). Simpson discloses a fire protection device for domestic appliances, comprising: at least one fault current circuit breaker (32, 34, 68, 42) coupled to the input electrical supply (62) of at least one conductor (12a, 14a) of a domestic appliance, which fault current circuit breaker (32, 34, 68, 42) disconnects said electrical supply (62) from said appliance when said fault current circuit breaker (32, 34, 68, 42) senses a fault current in said at least one conductor (12a, 14a), said fault current circuit breaker including a relay (42) connected to the at least one conductor (12a, 14a), a reset channel (26, 27), and a cumulative current transformer (32, 34) operable to constantly measure the sum of all currents, said relay (42) being operable to disconnect said electrical supply (62) from said appliance. Fault current circuit breaker (32, 34, 68, 42) comprises a primary transformer (32) and secondary winding (34) for sensing a load current, comparison and activation circuitry (68), and a power disconnect relay (42) that can be reset. Circuitry (68) causes relay (42) to cause disconnection between conductors (12a, 14a) and the power in the electrical supply outlet (62) when cumulative current transformer (32, 34) and circuitry (68) detect a predetermined deviation from a predetermined current sum,

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which predetermined deviation is indicative of a fault current. See abstract; Figs. '2-7; column 8, lines 36-39 and 49-67; column 12 lines 48-52; and column 18, lines 7-17. Simpson does not disclose that cumulative current transformer (32, 34) is operable to send a signal to reset channel (26, 27) in the event of the detection of the fault current, as it is required that a user to manually initiate a reset by unplugging a connector (10a) from a receptacle (16) of electrical supply (62), nor does the reference disclose a gas sensor.

However, Liu discloses a method of intelligently, or automatically, resetting a switch or relay after a power interruption in order to avoid accidents that may occur when the supply of power is resumed unexpectedly. See abstract and 1:42-47. It would have been obvious to one of ordinary skill in the art at the time of the invention to generate and send a signal to a reset channel of the relay in the event of the detection of a fault current in the fire protection device of Simpson in order to implement an automatic reset for improved safety, as disclosed by Liu. Note that, although Liu applies the automatic reset to a solid state electrical switch, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the concept of an automatic reset to a relay system in order to avoid accidents in the relay system.

Furthermore, Daffron discloses at least one gas sensor (6, 10) coupled to sense the quantity of at least one control gas in an appliance (5), which gas sensor (6, 10) causes an electrical supply (3) to be disconnected from said appliance (5) when said gas sensor (6, 10) senses a predetermined quantity of said at least one control gas. A circuit breaker mechanism (11, 12) disconnects the appliance (5) from electrical supply

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outlet (3) when at least one gas sensor (6, 10) senses a predetermined amount of carbon monoxide or carbon dioxide. See abstract; Figs. 1-3; column 2, and lines 4-9 and 15-19. Since both fault currents and gaseous combustion by-products can be an indication of the presence of a fire, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the fire protection device of Simpson in view of Liu with that of Daffron in order to provide a fire protection device that senses both fault currents and gaseous combustion by-products, thus improving fire protection.

7. Claims 22, 23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Liu (US 6,603,221) and Daffron (US 6,046,441), as applied to claim 21 above, and further in view of Justi et al. (US 3,973,192).

Regarding both claims 22 and 23, Daffron does not disclose that gas sensor (6, 10) is operable to detect a non-carbonaceous byproduct of combustion.

However, Justi et al. discloses a gas sensor (1) operable to detect a non-carbonaceous byproduct of combustion of polyvinyl chloride. Gas sensor (1) is a resistance body exposed to byproducts of combustion originating at least partly from a polyvinyl chloride substance. See abstract and Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the gas sensor of Justi et al. in the fire protection device of Simpson in view of Liu and Daffron in order to provide protection against fires in appliances using polyvinyl chloride as insulating coverings on electric cables, as detection of combustion of the substance would provide indication of a possible fire.

Regarding claims 25 and 26, all the limitations of claims 25 and 26 are recited in claims 21 and 22 above. Therefore, claims 25 and 26 are rejected under the same reasoning as that of claims 21 and 22. See above rejections.

Regarding claim 27, claim 27 corresponds to claim 23 and is rejected under the same reasoning as that of claim 23. See above rejection.

8. Claims 22, 24-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson (US 5,946,180) in view of Liu (US 6,603,221) and Daffron (US 6,046,441), as applied to claim 21 above, and further in view of Marshall (US 1,979,976).

Regarding both claims 22 and 24, Daffron does not disclose that gas sensor (6, 10) is operable to detect a non-carbonaceous byproduct of combustion.

However, Marshall discloses a gas sensor operable to detect a non-carbonaceous byproduct of combustion of several forms, including chlorine, for safety purposes. See page 1, columns 1-12 and page 3, columns 42-49. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate detection of chlorine as a non-carbonaceous byproduct of combustion, as disclosed by Marshall, in the fire protection device of Simpson in order to provide protection against hazards associated with the breathing in of poisonous gases originating from chlorine.

Regarding claims 25 and 26, all the limitations of claims 25 and 26 are recited in claims 21 and 22 above. Therefore, claims 25 and 26 are rejected under the same reasoning as that of claims 21 and 22. See above rejections.

Regarding claim 28, claim 28 corresponds to claim 24 and is rejected under the same reasoning as that of claim 24. See above rejection.

Response to Arguments

9. Applicant's arguments filed 6 March 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, there is motivation to combine Simpson and Daffron in the knowledge generally available to one of ordinary skill in the art. Both Simpson and Daffron disclose a fire protection device for a domestic appliance, that of Simpson concerning protection against fires associated with fault currents and that of Daffron concerning protection against fires associated with a predetermined quantity of combustion gases. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the fire protection methods of Simpson and Daffron simply in order to provide protection against fires associated with both fault currents and combustion gases. Providing protection against

fires associated with both fault currents and combustion gases, rather than only one or the other, would provide increased and improved fire protection.

In response to applicant's argument that the arrangement from selectively combining Simpson and Daffron would still not perform the same function or operate in the same manner as the device recited in claim 11 of the present application, Examiner asserts that a combination of the fire protection methods of Simpson and Daffron would produce a fire protection device for domestic appliances that protects against fires associated with both fault currents and combustion gases, wherein an electrical supply is disconnected from an appliance when a fault current circuit breaker, such as that of Simpson, senses a fault current in a conductor of said appliance, as well as when a gas sensor, such as that of Daffron, senses a predetermined quantity of a control gas in said appliance.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann T. Hoang, whose telephone number is 571-272-2724. The examiner can normally be reached Mondays through Fridays, 8:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached at 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ATH
24 June 2006



6-26-06

STEPHEN W. JACKSON
PRIMARY EXAMINER